
Digital Trunk Interface Diagnostic (LD 60)

The Digital Trunk Interface diagnostic program (LD 60) is used to maintain the following:

- QPC472 Digital Trunk Interface (DTI)
- QPC536 2.0 Mb/s Digital Trunk Interface (DTI)
- QPC720 Primary Rate Interface (PRI)
- QPC471 and QPC775 Clock Controller
- QPC785 2.0 Mb/s Digital Trunk Interface (DTI)
- NTAK09 1.5 Mb/s (DTI/PRI) Interface Card
- NTAK10 2.0 Mb/s (DTI) Interface Card
- NTAK79 2.0 Mb/s Primary Rate Interface (PRI)
- NTAK20 Clock Controller
- NTAK93 (PRI) D-channel Handler Interface

DTI messages

DTI0000	LD 60 identifier.
DTI0001	Invalid input character.
DTI0002	Invalid command.
DTI0003	Incorrect number of parameters.
DTI0004	Incorrect customer number.
DTI0005	Invalid parameter.

DTI0006	Loop specified is not a DTI/PRI loop. System Option 11 Card specified is not a DTI/PRI Card.
DTI0007	DISI request already active.
DTI0008	DISI command is complete.
DTI0009 l ch e	DTI/DTI2/PRI/PRI2 loop or channel failed hardware self test. For Option 11 systems with PRI2, this message can be followed by DTA105 messages with additional error codes. For DTI/PRI/PRI2 the output data is: l = loop (for Option 11, l = card) ch = channel e = error code for debug purposes For DTI2 the output data is: DTI009 l m e l = loop (for Option 11, l = card) m = N for NI microprocessor m = C for CI microprocessor e = error code for debug purposes. Error codes for NI microprocessor (m = N): 00 = NI self-test has finished 01 = Undefined messout received 02 = Problem with group 2 error handling (invalid level) 03 = NI to CI FIFO full (128 messages lost) 04 = CI-1 Micro failed to initialize on power-up 05 = NI group 1 error handling - undefined condition found 06 = Bad MESSOUT number 6 encountered 07 = NI Messout queue fails 08 = NI Messin queue full 09 = NI priority Messin queue is full 10 = Bad MESSOUT number 10 encountered 11 = TN = 0 read from regular queue 12 = TN = 0 read from priority queue 14 = Bad TN associated with MESSOUT number 4 15 = Bad TN associated with MESSOUT number 15 50 = External RAM in range 880H-8EFH failed (MESSIN queue)

- 51 = Internal RAM test failed
 - 52 = Pad RAM test failed
 - 53 = External RAM test failed
 - 54 = 8253 timer/counter test failed
 - 55 = Slip counter test failed
 - 56 = Loopback of TS 16 frame 0 failed
 - 57 = Loopback of non fas TS O failed
 - 58 = Echo test to CI-1 micro failed
 - 255 = Loss of NI FIFO synchronization (Stop byte = 0 not found).
- DTI009 error codes for CI microprocessor (m = C):
- 03 = A complete message was not received from NI micro
 - 128 = Message received by CI-1 through FIFO requested an undefined task
 - 129 = Message number 26 contained more than one bit set to indicate which of the ABCD bits is to be used for PPM
 - 130 = An attempt was made to set the flag to invoke the pulse timer for TS 0
 - 131 = A request for a task defined under Messout 30 has been received with the TN of TS 0
 - 132 = Attempt was made to enable outpulsing TS 0 or TS 16
 - 133 = A Messout 31 has been received for TS 0 or TS 16 with the pulse hold time not = 0
 - 134 = An attempt has been made to set the bit to invoke the pulse timer for TS 0 or TS 16
 - 135 = A request for outpulsing was received, but outpulsing data was not downloaded
 - 137 = A request for PPM counting was received, but the was not downloaded
 - 138 = A Messout 30 was received requesting a task to be performed for DTI TS 16 which is not allowed
 - 139 = The 8031 on CHIP RAM failed self-test
 - 140 = The TS 16 signalling RAM and/or the TS 16 pick-up buffer failed self-test.
 - 141 = The CI-1 micro external RAM failed self-test
 - 142 = Attempt was made to set/clear the flag used to invoke PPM pulse timing for DTI timeslot 0 or 16

- 143 = CI-2 micro responded to echo request message but response was in error
- 144 = CI-2 micro failed to respond to request echo message
- 145 = SL-1 TN of MESSOUT received is not 0 0 7 3 (self-test)
- 146 = The TN of MESSOUT 26 received was not that of TS 0
- 147 = The TN of MESSOUT 28 received was not that of TS 0
- 148 = The TN of MESSOUT 29 received was not that of TS 0
- 149 = Upon enabling the DTI pack, the CI-1 was unable to write Frame 0, TS 16 with '0B'
- 150 = MESSOUT 26 was received with the PPM counting bit (abcd) all equal to zero
- 151 = MESSOUT 28 was received with the outpulsing bit (abcd) equal to zero
- 152 = CI-2 failed to respond to the CI-1 watch dog message
- 153 = The CI-2 failed to respond to five consecutive watchdog messages and is assumed to be out-of-service
- 154 = Messout received requesting the lower nibble of MFAS pattern to be written with something other than '0000'
- 155 = MESSOUT received requesting '0000' to be written into an 'abcd' state
- 156 = MESSOUT received with a TN outside the range shelf 0, card 8-1, unit 3-0
- 157 = CI-1, NI FIFO overflowed, and has been cleared. 128 messages were lost.
- 159 = Cannot request complex messaging on ch 0 or ch 16
- 160 = Message queue for this channel is full
- 161 = Message queue for this channel is almost full=
- 163 = TN received was not that of TS 0
- 164 = Continuous pulse detection not allowed on channel 0
- 165 = Continuous pulse detection not allowed on channel 16
- 166 = Maximum continuous pulse time must be greater than the minimum
- 167 = Cannot have PPM and Continuous Pulse Detection at the same time
- 168 = Cannot request PPM actions when Continuous Pulse is on

DTI0010 loop c System clock c cannot be switched in to replace active clock; or another loop is already in loopback mode.

DTI0011 c System clock c cannot be switched in because loss of service will result to the peripheral signalling pack listed.

The following fault clearing procedure may be performed.

Action: If the problem persists contact your technical support representative.

1. Identify the GROUP(s) containing the identical PS cards.
2. Identify the IGS card(s) that supplies the clock signal from the indicated clock to the GROUP(s).
3. Use OVL 39 to disable and re-enable that IGS card(s) (ENL/DIS IGS n).
4. Retry switching clocks (SWCK).

DTI0012 x	Network loop/card x pack does not respond from IOTEST; loop/card x is disabled.
DTI0013 x	No channel is available on loop/card x for diagnostic test. No self-test is performed on loop/card x.
DTI0014 x	Loop/Card x is in remote loop-back mode; command not allowed
DTI0015 x	Loop/Card x is not specified as primary or secondary clock reference source.
DTI0016	The DTI package is not equipped; LD 60 is not allowed to load.
DTI0017	Previous command in progress; enter END to abort.
DTI0018 x	DISI command for loop/card x aborted.
DTI0019	The loop/channel or card/channel is not disabled for self-test or it is already in the requested set/reset loop-back mode.
DTI0020 x	Loop/Card x is already disabled. No action is taken.
DTI0021	Attempt was made to disable input TTY loop.
DTI0022 x	Loop/Card x is already enabled.
DTI0023 x ch	Cannot disable/enable loop/card x channel ch.
DTI0024	Loop/Card is enabled but no response from hardware.
DTI0025 x ch	Loop/Card x channel ch is not equipped.
DTI0026 c r	Invalid input parameter to LOVF command for customer c, route r.
DTI0027 x ch	Loop/Card x or loop/card x channel ch is not in loopback test mode.
DTI0028 x ch	No test result received before timeout from the specified loop/card x or loop/card

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DTI0029 x	Loop/card x is enabled but red (local) and yellow (remote) alarms exist.
DTI0030 x	Loop/card x is enabled but red alarm (local alarm) exists.
DTI0031 x	Loop/card x is enabled but yellow alarm (remote alarm) exists.
DTI0032 x	Loop/card x is in yellow alarm (remote alarm) state or waiting for yellow alarm sending seized message from hardware. Action: Do not perform the automatic/midnight self-test.
DTI0033 x	Loop/card x is in red/yellow/audit state. Command not allowed.
DTI0034 loop	Switching in clock controller is not allowed for this machine type.
DTI0035	Clock controller does not exist.
DTI0036 x	Continuity checker on loop/card x is faulty. Network loop/card x probably faulty.
DTI0037 x	Unable to read partial alarm counts from DTI hardware on loop/card x. Following alarm counts are not complete.
DTI0038 x	No channel is available on loop/card x for diagnostic. Self-test was not performed.
DTI0039 x	Continuity test failed on loop/card x.
DTI0040 x ch	Loopback test failed on loop/card x channel ch.
DTI0041 x	Network memory test failed. Action: Replace network loop/card x.
DTI0042 x ch	No timeslots available for loopback test. Loopback test not tested on channel ch. If loop/card level test, all channels greater than and including channel ch not tested.
DTI0043	Another channel already in loopback mode.
DTI0044 x	Loop/card x enabled by midnight routine.
DTI0045 x	Self-test not performed on loop/card x because loop/card x was disabled manually.
DTI0046 x	Self-test not performed on loop/card x. Loop/card x could not be accessed.
DTI0047 x	Self-test not performed on loop/card x since loop/card x is in remote loop back mode.

DTI0048 x m	DTI loop/card x, Microprocessor m failed echo message self-test.
DTI0049 x ts	Network map in software indicates that timeslot ts of loop/card x is idle but the connection memory word for that slot on loop/card x is not idle.
DTI0050 x	Continuity checker on loop/card x is faulty. Network loop/card x is probably faulty.
DTI0051	Data link is not defined.
DTI0052	Tracking rejected. Reference primary is not specified.
DTI0053	Unable to track on primary.
DTI0054	Tracking rejected. Reference secondary is not specified.
DTI0055	Unable to track on secondary.
DTI0056	Unable to access clock controller.
DTI0057	Unable to free run.
DTI0058	Supposed to free run but hardware is tracking on primary.
DTI0059	Supposed to free run but hardware is tracking on secondary.
DTI0060	Supposed to track on primary but hardware is tracking on secondary.
DTI0061	Supposed to track on primary but hardware is free run.
DTI0062	Supposed to track on secondary but hardware is tracking on primary.
DTI0063	Supposed to track on secondary but hardware is free run.
DTI0064	Cannot determine which CPU is in use.
DTI0065	System clock must be switched before proceeding.
DTI0066	Idle CPU must be switched in for active CPU before proceeding.
DTI0067 c	System clock generator c is already enabled.
DTI0068 c	System clock generator c is not responding.
DTI0069 x	Unable to track on loop/card x.
DTI0070	Clock cannot be switched. Unable to track the reference loop/card.
DTI0071	The ENCH loop/card ch command is not allowed here because the channel is

DTI0072	The ENCH loop/card ch command is not allowed because the associated D-channel is not established.
DTI0073 loop	If loop is a QPC720, then the pack is not responding. If loop is a QPC472, then ignore this message.
DTI0074 n	The clock controllers cannot be switched because clock controller n is software disabled. Action: Enable the disabled pack provided it is operational.
DTI0081	B-channel cannot be enabled until a DCH Link is established.
DTI0096	Loopback test on DTI2 is not supported on Option 11 since Release 20B.
DTI0097	Disabling of this DTI2 loop is not allowed because it is providing primary or secondary reference clock to the system and automatic switchover of the reference clocks has been disabled. Action: If this loop must be disabled for maintenance, then LD60 and enter command EREF to allow switchover of the ref clock. Afterwards, MREF can be entered to disallow automatic switchover again.
DTI0098	Command entered applies to 1.5 Mb DTI only.
DTI0099	Command entered applies to 2.0 Mb DTI only.
DTI0100 x	DTI link loop/card x is associated with an indirect command and Status Link. Loop/card x cannot be disabled until the CSL is disabled.
DTI0101	Server using channel for maintenance, cannot Remove Link.
DTI0108	No clock has been found in side S. This indicates that either there is no clock in side S or the clock installed in side S has its shelf-side switch set wrong.
DTI0200	WARNING: There is an active clock controller on the digital trunk card. If your intent is to remove the card from the shelf, disable the clock controller before removing the card from the shelf. (Option 11 only)
DTI0202 I	DTI loop I with LCMT B8ZS cannot be enabled because a QPC720 card is required.
DTI0203 I	DTI loop I with ESF framing format cannot be enabled because a QPC720 card
DTI0204	PRI2 card cannot be enabled because it may be in a wrong slot.

DTI0205	Clock found in group G side S is different from its address found during system initialization. No attempt to overwrite the address found during initialization.
DTI0206	More than one clock has been found in side S. The information on Group of the extra clock(s) is provided.
DTI0207	No clock has been found in side S. This indicates that either there is no clock in side S or the clock in side S has its shelf-side switch set wrong.
DTI0208	The command requested by the craft person is not applicable for Phantom DTI2 loops. Repeat the command on non-Phantom DTI2 loops.
DTI4130	Incompatible protocol between the interfaces. Action: If this error continues, report it.
DTI4131	Incompatible protocol between the interfaces. Action: If this error continues, report it.
DTI4132	ENCH L C command is not allowed because the associated D-channel is not established.
DTI4133	Command is specific to 7SIG interface. Action: Check the configuration and then try again.
DTI4134	No blocking on an outgoing route only. Action: Check the configuration and then try again.